Public Service Commission of Wisconsin
Rebuttal Testimony of Sam Shannon
Division of Water, Compliance, and Consumer Affairs

Public Service Commission of Wisconsin
Docket 3720-WR-108

June 13, 2014

Q. **Please state your name, business address and occupation.**

A. My name is Sam Shannon. I am a Rate Analyst at the Public Service Commission of Wisconsin (Commission) in the Gas and Energy Division. My business address is 610 N. Whitney Way, PO Box 7854, Madison, Wisconsin, 53707.

Q. **Please state your educational background.**

A. I graduated from Southwestern University in Georgetown, TX with a Bachelors of Arts in Philosophy and Spanish Literature in 2007. I graduated from UW-Madison with a Masters in Public Affairs, and I received a graduate certificate in Energy Analysis & Policy in 2013. I have been employed by the Commission since 2013.

Q. **Please state your work responsibilities.**

A. As a Rate Analyst, I have performed cost of service studies and rate design for water and electric municipal utilities. I have also worked with municipalities on utility policy matters related to annexation and incorporation.

Q. **What is the purpose of your testimony?**

A. I am here to discuss the public fire protection (PFP) charges for Milwaukee Water Works' (MWW) retail and wholesale customers.

Q. **Have you reviewed the testimony provided by the witnesses for the wholesale communities related to the PFP charge?**

A. Yes.

Q. **Do you agree with the positions of the wholesale witnesses that the wholesale customers should not be allocated PFP costs?**

A. For the most part, yes. Their argument that the wholesale communities have their own distribution storage capacity to fight fires seems like a reasonable justification for not being assessed a public fire protection charge by MWW.

Q. **What would the impact be of removing the wholesale customers from the PFP allocation?**

A. Under the Utility's proposal, the $781,349 collected by the wholesale customers in PFP charges would be reallocated back to the retail classes. MWW retail customers would then bear the full PFP allocation of $8,307,918.

Q. **Is there anything that you would change in the cost of service study to address this?**

A. Yes. Mr. Rothstein touches on the required fire flow used in the current and the previous MWW rate cases on page 25 of his direct testimony. (PSC REF# 205715) He correctly notes that the fire flow is determined as a function of the population of the service area. However, he does not discuss how the fire flow requirement would change absent the wholesale customers. If the Commission were to not allocate PFP charges to the wholesale customers, I would adjust the fire flow accordingly.

Q. **What basis would you use to determine the fire flow absent the wholesale customers?**

A. The Insurance Services Office (ISO) provides a nationally recognized standard for rating a community's ability to fight fires, the Public Protection Classification (PPC), which is used by the insurance industry to calculate property insurance premiums. As part of the ISO rating system, they do on-the-ground ratings of actual buildings in a community to

estimate the amount of water needed to fight a fire at that particular property, what they call the "Needed Fire Flow". These estimates are then used to establish a "Base Fire Flow" number that the water distribution system should have available at any given time or location. The maximum for any community for the Base Fire Flow is 3,500 gallons per minute for 4 hours.

Q. **That maximum seems low. How does it account for large fire events?**

A. The Base Fire Flow is not meant to represent the total capacity of a water distribution system. Certainly, a city the size of Milwaukee will have adequate storage and pumping capacity to greatly exceed the Base Fire Flow. ISO, as an insurance industry group, looks at the risk associated with individual fire events. Large properties with a Needed Fire Flow greater than the base would share in the responsibility for fire protection through better construction, sprinkler systems, etc.

Q. **Would you recommend the Commission use the Base Fire Flow, as determined by an ISO report, in this case?**

A. Yes, with one modification. It is reasonable to expect in a city the size of Milwaukee the possibility of two simultaneous fire events. Therefore, I would set the fire flow at 7,000 gallons per minute for 4 hours.

Q. **What would the impact to rates be to make this change to the fire flow?**

A. Assuming all other things constant, making that change would result in an allocation of $5,235,455 to public fire protection. That cost would be spread across the MWW retail customers. The remainder from the original PFP charge would be distributed among all MWW customers through the general service rates according to the current allocation. The wholesale customers could expect to see an increase in general service

rates of $531,468, resulting in a net savings to the wholesale customers of $249,881 over the current Utility proposal.

Q. **Would this change result in a just and reasonable allocation?**

A. Yes. Instead of a fixed charge for available capacity, the wholesale customers would pay for that extra capacity as a function of the volume they take from MWW. In the event of a fire, the wholesale customer would avail themselves of that capacity to either supplement their own capacity or refill their storage.

Q. **Mr. Planton mentions in his testimony that Shorewood, the Milwaukee County Institutions, and part of West Allis do receive some PFP benefit from the MWW system. How does your proposal account for this?**

A. The proposed change to the fire flow is still reasonable because the presence of those communities does not present a great enough increase in the likelihood of an additional simultaneous fire event. Since they do not have adequate distribution systems to cover their fire flow needs, these communities would receive an allocation of the fire protection customer class as in previous rate cases. The Commission could allocate a PFP charge to those wholesale customers based on the equivalent meters for their retail customers that receive PFP benefits from the MWW system. Allocating based on equivalent meters would remove the uncertainties inherent in the population-based fire flow method and would be an easily reproducible method in future rate cases.

Q. **What advantages does this method for determining fire flow have over the population-based formulas currently used by the Commission?**

A. The formulas currently used by the Commission were developed in the early and middle part of the 1900's. Since then there have been significant advances in building codes,

construction methods, and fire suppression technology. Therefore, buildings are less flammable and can do a better job of containing or suppressing fires than in past decades. The ISO method of determining the Needed Fire Flow for properties in a community take the actual construction and contents of a building into account, reflecting these advances for modern buildings.

Additionally, the formulas use population as a proxy for the actual buildings in a community. As part of the PPC rating, ISO conducts surveys of the buildings on the ground. Therefore, the ISO method produces a fire flow requirement that is based on the individual make-ups of a community. For example, two villages of 1,000 people each would have the same fire flow requirement under current Commission practice, regardless of what is actually in the community. However, if one of those villages is mainly residences and small commercial buildings and the other contains a paint factory in town, the two villages would have drastically different fire flow needs.

Q. **Does this complete your rebuttal testimony?**

A. Yes.

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